



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/718,913 | 11/21/2003 | John M. McBean | MIT-152AUS | 2397 |
| 22494 | 7590 | 04/06/2006 | EXAMINER | |
| DALY, CROWLEY, MOFFORD & DURKEE, LLP SUITE 301A 354A TURNPIKE STREET CANTON, MA 02021-2714 | | | BROWN, MICHAEL A | |
| | | ART UNIT | | PAPER NUMBER |
| | | | | 3764 |

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/718,913 | MCBEAN ET AL. | |
| | Examiner | Art Unit | |
| | Michael Brown | 3764 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-6 and 9-20 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
 5) Claim(s) ____ is/are allowed.
 6) Claim(s) 1-6 and 9-20 is/are rejected.
 7) Claim(s) ____ is/are objected to.
 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>3-6-06</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 12 and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. It is not clear if the straps connected to the hinge portions are the same straps attached to the brace.

Claims 12 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 12, it isn't clear if the first and second straps recited in claim 12 are the same straps recited in claim 11. In claim 14, it isn't clear if the groove is the same groove recited in claim 11.

Note: Although claims 11-20 were previously indicated as allowable, a new search has provided prior art that was used to reject these claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6, 11-15, 17-18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Bonutti '830.

Bonutti discloses in figure 10 a powered orthotic device for therapeutic movement training comprising a brace 10, having a length (fig. 10), including a mechanism (the straps 30), for attaching the brace, a sensor (col. 10, lines 17-19) that is coupled to a muscle (because the brace is coupled to a muscle), a processor (col. 10, lines 13-16), coupled to the sensor (the device is one piece, making the processor be coupled to the sensor), an actuator 22, the process causing the actuator to provide a force to the brace in a first direction having a magnitude which is proportional to a magnitude of the sensor signal and in a second direction a spring return force (is intended use) that the prior art is capable of performing, , an active feedback control loop (inside of 210), that includes a means for measuring (col. 10, lines 24-28), a cable drive 166, coupled between the actuator and the brace and the actuator is hydraulic (fluid controlled).

Bonutti '830 discloses in figure 10 a brace (fig. 10), having first and second straps (52, 30) a cable wheel (fig. 10, the wheel that cable 110 passes over), coupled to the brace, a continuous cable 110 coupled to the cable wheel (fig. 10), the continuous cable is disposed around the cable wheel (fig. 10), with a groove (the opening in the wheel that the cable is inside of), the continuous cable is retained on the second strap (by fastener 116), a hinge mechanism having first and second hinge portions (70, 72),

the hinge mechanism includes adjustable stops (210 limits movement, stops), a cable retainer 116, an actuator 22, a power source (fluid power) and a sensor (col. 10, lines 13- 16).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bountti in view of Petrofsky.

Bountti discloses in figure 10 a powered orthotic device, substantially as claimed. However, Bountti doesn't disclose a control means including a means for making a low impedance measurement of output torque providing a feedback signal to an actuator and coupled to the actuator. Petrofsky teaches in figures 15 a computer controlled hydraulic resistance device comprising a sensing and control in a closed loop manner (co. 10, lines 10-15), a hydraulic actuator 211, a means 200 for receiving a sensor signal 2 and for scaling the sensor signal and the closed loop circuit 207, controls the amount of force (the valve 210 controls the amount of force applied to the actuator). It would have been obvious to one having ordinary skill in the art at the time that the invention as made that sensing and closed loop circuit as taught by Petrofsky could be incorporated into the orthotic device disclosed by Bountti in order to use the closed loop circuit to control the amount of pressure that is applied to the actuator. Thus, making it

possible to control the movement of the orthotic. Petrofsky also teaches a control means 200 that includes a means for making low impedance measurement of output torque.

Claims 5 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bountti in view of Rahman.

Bountti discloses in figure 10 a powered orthotic device, substantially as claimed. However, Bountii doesn't disclose a portion of the cable drive system connected to a wheel chair. Rahman teaches in figure 3 a powered orthotic comprising a cable drive system connected to a wheelchair (col. 1, lines 35-37). It would have been obvious to one having ordinary skill in the art at the time that the invention was made that the powered orthotid device having cable drive system disclosed by Bountti could be attached to a wheelchair as taught by Rahman in order to use the powered orthotic to assist a person in a wheelchair. Fluid power can be used to control a wheelchair.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bountti in view of Hatton.

Bountti discloses in figure 10 a powered orthotic device, substantially as claimed. However, Bountti doesn't disclose the cable being surround by an outer cable jacket. Hatton teaches in figure 10 a knee brace comprising a cable 84 surrounded by an outer jacket 86. It would have been obvious to one having ordinary skill in the art at the time that the invention was made that the outer cable jacket as taught by Hatton could be incorporated into the device disclosed by Bountii in order to used the outer cable jacket to protect the cable disclosed by Bountii to decrease wear on the cable.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mavroidis discloses an orthotic.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Brown whose telephone number is 571-272-4972. The examiner can normally be reached on 5:30 am-4:00 pm Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gergory Huson can be reached on 571-272-4887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



M. Brown
March 30, 2006

MICHAEL A. BROWN
PRIMARY EXAMINER